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CLAIM(S)

What is claimed is :

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1. An unwinder comprising:

a) a frame;

b) a fiber package holder affixed to said frame;

c) a fiber package held on the fiber package holder about a

10 rotational axis such that at least one fiber can unwind from said fiber package in a direction defining an acute angle with the rotational axis of the fiber package;

d) a driven take-off roll for unwinding said at least one fiber from the fiber package; and

15 e) a first fiber guide for directing said at least one fiber as said at least one fiber is unwound from the fiber package, said first fiber guide defining a fiber guide inlet orifice having a central axis and positioned on said frame such that:

20 i. a distance (d) from the first fiber guide to a front end of the fiber package facing said first fiber guide, measured on the line defined by the rotational axis of the fiber package, is equal to:

1) at least about 0.41 meter when said at least one fiber has tack greater than about 2 grams OETO and less than about 7.5 grams OETO; or

25 2) from about 0.71 meter to about 0.91 meter when said at least one fiber has tack greater than about 7.5; and

ii. an angle (θ), defined by the intersection of imaginary lines corresponding, respectively, to the rotational axis of the package and the central axis of the fiber guide inlet orifice is equal to:

30 1) 0° to about 30° when said at least one fiber has tack greater than about 2 grams OETO and less than about 7.5 grams OETO; or

2) 0° to about 10° when said at least one fiber has tack greater than about 7.5 grams OETO.

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2. The unwinder of claim 1 further comprising a second fiber guide positioned between said fiber package and said first fiber guide for
5 directing said at least one fiber as said at least one fiber is unwound from the fiber package.
3. The unwinder of claim 2 further comprising a third fiber guide positioned between said first fiber guide and said driven take-off roll.
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4. The unwinder of claim 3 further comprising a fourth fiber guide positioned between said third fiber guide and said driven take-up roll.
5. The unwinder of claim 1 wherein said first fiber guide comprises
15 comprises a grooved roll.
6. The unwinder of claim 1 wherein said first fiber guide comprises a circular guide having a wear-resistant surface for contacting the fiber.
- 20 7. The unwinder of claim 6 wherein said wear-resistant surface is the inner surface of an annulus.
8. The unwinder of claim 1 wherein said first fiber guide is a static guide.
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9. A method for unwinding fiber from a fiber package comprising the steps of:
- a. holding the fiber package about a rotational axis such that at least one fiber can unwind from the fiber package in a direction defining an
30 acute angle with the rotational axis of the fiber package;
 - b. unwinding fiber from the fiber package;
 - c. controlling the direction of said at least one fiber by passing said at least one fiber through a first static fiber guide having an orifice with a central axis that is perpendicular to the plane of the orifice;

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- 5 d. establishing the distance (d) from said first static fiber guide to a front end of said fiber package facing said fiber guide, measured on the line defined by the rotational axis of the fiber package, such that said distance (d) is equal to:
- i. at least about 0.41 meter when said at least one fiber has tack of greater than about 2 grams OETO and less than about 7.5 grams OETO; or
 - 10 ii. from about 0.71 meter to about 0.91 meter when said at least one fiber has tack greater than about 7.5 grams OETO; and
- e. setting an angle (θ), defined by the intersection of imaginary lines corresponding, respectively, to the rotational axis of the package and the central axis of said first fiber guide, such that said angle (θ) is equal to:
- 15 i. 0° to about 30° when said at least one fiber has tack greater than about 2 grams OETO and less than about 7.5 grams OETO; or
 - ii. 0° to about 10° when said at least one fiber has tack greater than about 7.5 grams OETO.

- 20 10. The method of claim 9 further comprising providing a second fiber guide positioned between said fiber package and said first static fiber guide for directing said at least one fiber as said at least one fiber is unwound from the fiber package.